



# UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE  
United States Patent and Trademark Office  
Address: COMMISSIONER FOR PATENTS  
P.O. Box 1450  
Alexandria, Virginia 22313-1450  
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/779,617	02/18/2004	Masahiko Kamiya	14-028	8878

23400 7590 06/15/2004

POSZ & BETHARDS, PLC  
11250 ROGER BACON DRIVE  
SUITE 10  
RESTON, VA 20190

EXAMINER

SCHWARTZ, CHRISTOPHER P

ART UNIT	PAPER NUMBER
----------	--------------

3683

DATE MAILED: 06/15/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

<b>Office Action Summary</b>	Application No. 10/779,617	Applicant(s) KAMIYA ET AL.	
	Examiner Christopher P. Schwartz	Art Unit 3683	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

#### Status

- 1) ☐ Responsive to communication(s) filed on \_\_\_\_.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

#### Disposition of Claims

- 4) ☐ Claim(s) 1-9 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-9 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_ are subject to restriction and/or election requirement.

#### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

#### Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All    b) ☐ Some \* c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

#### Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date 2.

- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_.

*Christopher P. Schwartz*  
**CHRISTOPHER P. SCHWARTZ**  
**PRIMARY EXAMINER**

***Priority***

1. Receipt is acknowledged of papers submitted under 35 U.S.C. 119(a)-(d), which papers have been placed of record in the file.

***Information Disclosure Statement***

2. The information disclosure statement has been received and considered.

***Claim Rejections - 35 USC § 103***

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

5. Claims 1,2,4 are rejected under 35 U.S.C. 103(a) as being unpatentable over Tsang et al. in view of Japanese publication 2002104169 ('169).

Regarding claim 1 Tsang et al. discloses a brake system having a noise detection and prevention device. The brake force "regulating portion", as broadly

Art Unit: 3683

claimed, is considered to be the valves 56,62,68 and 70,72,74. Note the control portion at 80.

Tsang et al. lacks using a "dither current" to control the valves upon the detection of excessive noise levels.

JP '169 teaches using such a current, but for current reduction and presumably energy savings.

One having ordinary skill in the art at the time of the invention would have found it obvious to have used a "dither current" in the device of Tsang et al. to control the actuation of the valves and in order to minimize current required or the effect of coulomb friction, hysteresis and deadband (as is known in the art) with respect to actuation of the valves.

Regarding claim 2 note that Tsang et al. uses proportioning valves at 54 and 57. Simply to have modified Tsang et al. so that a linear/solenoid actuated valve could be used would simply amount to an alternate equivalent arrangement of known valves dependent upon such well known factors as performance, cost and reliability. And to have used a dither current to regulate such a valve would have been obvious for the reasons above.

Regarding claim 4 to have adjusted the "dither frequency" dependent upon the braking characteristics (i.e. noise level etc.) would have been obvious to the ordinary skilled worker in the art at the time of the invention.

Art Unit: 3683

6. Claim 3 rejected under 35 U.S.C. 103(a) as being unpatentable over Tsang et al. in view of JP '169 as applied to claim 2 above, and further in view of Yamaguchi et al. '581.

Regarding claim 3 Tsang et al., as modified, lacks a showing of the particulars of the valving arrangement claimed.

Yamaguchi et al. '581 shows a brake system having a valve arrangement similar to applicants.

To have applied the teaching of Tsang et al., as modified above, to a brake system having the valve arrangement shown by Yamaguchi et al., to suppress noise levels by using a dither current for valve actuation would have been obvious for the reasons stated above.

7. Claims 5-9 are rejected under 35 U.S.C. 103(a) as being unpatentable over Tsang et al. in view of JP('169), as applied to claim1 above, and further in view of Takahashi.

Regarding claim 5 Tsang et al. lacks showing using a "driving actuator" for the braking force regulating portion.

Takahashi teaches using well known electric actuators 152 to actuate the brakes.

One having ordinary skill in the art at the time of the invention would have found it obvious to have used such electric actuators to actuate the brakes in Tsang et al., as modified above, for increased responsiveness. Further to have applied the dither current to these actuators for the reasons given above would also have been obvious to the ordinary skilled worker in the art.

Art Unit: 3683

Regarding claims 6-9 these limitations would have been obvious to the ordinary skilled worker in the art through routine optimization of the device and/or to improve energy savings.

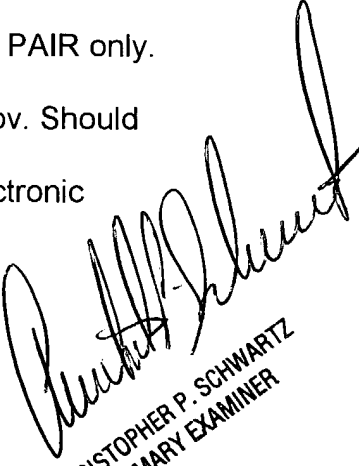
**Conclusion**

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Christopher P. Schwartz whose telephone number is 703-308-0576. The examiner can normally be reached on M-F 9:30-6:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Jack W. Lavinder can be reached on 703-308-3421. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Cps  
6/3/04

  
CHRISTOPHER P. SCHWARTZ  
PRIMARY EXAMINER